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MILLET.

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Ohio farmers have long been familiar with a group of annual forage plants classed under the general name of "millet." These plants differ widely, but have this in common: They are all hot-weather annuals of the grass family and are used primarily for hay and forage.

They are not regarded by farmers in general as staple crops, having their regular place in the farm rotation, but rather as "catch" or substitute crops. As such they are frequently used to advantage in case of a failure of the corn crop or a failure to get corn planted at all, as a result of unseasonable weather; after harvesting a light or weedy crop of clover or timothy, and so forth.

They are sometimes used to advantage in systems of intensive farming where two crops are wanted from the same land in one season, as for instance when rye or oat and pea hay is followed by a crop of millet.

The earlier sorts of millet may be seeded well on through July and yet furnish fair yields in favorable seasons.

USES.

Hay. The most common use made of millet is as a hay crop. It compares very favorably with timothy hay, slightly exceeding it, when properly made, both in composition and in digestibility.

It makes a desirable feed for cattle, sheep and horses, but it is well not to feed it too exclusively. The exclusive feeding of over-ripe millet has been known to injuriously affect the kidneys of horses. The short, stiff hairs of ripe millet are also harmful. Millet makes a palatable hay and is consumed with less waste than many of the annuals used as hay producers.

Soiling: Where it is found desirable to practice soiling—and about the only extensive keeper of livestock who will not find it desirable is the one who uses silage to supplement mid-, or late summer pastures—millet is a crop that is well worthy of consideration. Under favorable conditions it will be ready to begin feeding in from 40 to 50 days from seeding.

This Station has found the Hungarian and German millets more satisfactory for soiling, all things considered, than the Barnyard millet, though some speak highly of the latter.

Pasture: Annual grasses are not generally used for pasturing, yet under some conditions it may be advisable not to cut and remove a crop of millet but simply pasture it off. Common and Hungarian millets are the most satisfactory varieties for pasturing. Millet is sometimes seeded with cowpeas and soybeans for use as pasture.

Silage: Millet can be preserved successfully in the silo. While this Station has had but little experience with millet silage, the Massachusetts Station, with a number of years' experience, reports satisfactory results. Millet, however, is so palatable and so easily handled as hay—at least the varieties most successful in Ohio—that it will likely be used in this way, save possibly when weather conditions are unfavorable for hay making, or when the corn crop is unavoidably short.

Seed: Millet is a fairly profitable crop when grown for seed, yielding from 15 to 40 bushels per acre. In sections where the grain is the main object the broom corn millets are generally grown.

Soil cleaner: Millet has quite a reputation as a weed eradicator. When seeded under favorable conditions as regards heat, moisture, fertility and tilth, there are few weeds that will survive a crop of millet. It is almost equal to a summer fallow.

VARIETIES.

There are three principal groups of millets: The foxtail (*Chaetochloa Italica*), the broom-corn (*Panicum miliaceum*), and the barnyard (*Panicum Crus-galli.*)

Foxtail Millets: The foxtail millets are by far more generally grown in this country than the other groups. They may be distinguished by the shape of head—a single spike.

Three varieties of this group are well known and very generally grown. They are Common, Hungarian and German millets.

Common millet, as its name indicates, is the variety which first came into general use. In length of season it is the earliest of the three and consequently is grown in the northern part of the millet section. It is considered rather more resistant to drouth and will give better returns upon poor soils than the German, though not as large yields upon rich soil. The head is medium in size; seed somewhat larger than either Hungarian or German, oval in shape and yellow in color.

Hungarian millet, sometimes called Hungarian grass, differs from the other varieties of this group in having shorter and more erect heads, and a large percentage of dark purple seeds. Part of its seeds are yellow and part purple. In length of season it is intermediate between the Common and the German. It is not as coarse as the German and makes a rather more desirable quality of hay. Like the Common, it produces a number of stems from a single seed. It is very popular in Ohio and east.

German millet is a later variety; a very rank grower; has large, nodding heads, frequently an inch in diameter; leaves broad, short and stiff; seeds small and yellow. This variety usually produces but one stem per seed. It is grown quite extensively upon the better lands of the south and has a place upon the richer lands of Ohio, but will not bear quite as late seeding as the smaller varieties.

The foxtail millets weigh 48 to 50 pounds per bushel.

Broom-corn Millets: The millets of this group have not come into very general use in the United States, but are grown extensively in Europe. The name is due to the similarity of head to that of broom corn. The stems are much coarser than the foxtail millets, seeds much larger and of different colors. Usually they do not produce as much forage as the latter but rather more seed.

The only variety of the broom-corn group that this Station has tested is the White French. It has proved to be a good yielder of forage.

Having the ability to produce large crops of grain in short and dry seasons, this group of millets has become quite popular in the northwest as a substitute for corn.

Barnyard Millet: The most valuable varieties of this species barnyard grass) have been imported from Japan. The Massachusetts Station introduced a variety some years ago which it recommends for soiling, and for silage, when, for any reason, corn cannot be had, but says, "it is not suitable for hay." (Mass. Report 1901, page 33.)

This is the same variety that has been sold under the name of "Billion-dollar grass."

While it yields immense crops, this Station has not found it a very palatable feed and does not consider it as well suited to average Ohio conditions as the foxtail millets.

Pearl Millet (*Pennisetum spicatum*): Quite unlike the millets thus far mentioned, bearing more resemblance to corn and sorghum than to the common millets. While hardly to be classed with the latter, it is generally sold under the name of millet. It grows 6 to 10 feet in height and bears a cylindrical spike from 6 to 12 inches in length and about an inch in diameter which closely resembles the "cat-tail" flag, and, for this reason, it is commonly called "cat-tail" millet. It suckers extensively and has quite a reputation as a soiling plant, permitting several cuttings in the South, where it is more at home, owing to its length of season.

Pearl millet has been sold under more than a dozen different names, including Penicillaria, Horse millet and Mand's Wonder.

Teosinte (*Euchlaena Mexicana*): Owing to generous advertising of seedsmen and consequent calls for information regarding Teosinte, a word here may not be out of place. It is an annual forage plant closely related to corn. It requires a very long season of extreme heat and moisture; being a native of the warm parts of Mexico, and Central and South America. In favorable localities along the Gulf coast it is accredited with yields of 20 to 50 tons per acre. As it is carried northward it rapidly deteriorates. It has been grown

at this Station in a small way for a number of years but seldom amounts to much. It is so far inferior to corn and sorghum that its use cannot be advised in Ohio.

Teosinte and Pearl millet are in no sense of the word "catch" crops, nor can they serve the purpose of such.

CULTURE.

Soils and Fertilizers: For best results millet should be given a rich, mellow soil, though it can be grown with varying success upon almost any soil. Being a shallow-rooted plant, and making its growth in a comparatively short time, it is exhaustive of the available plant food in the surface soil, and its reputation of being "hard on the land" has some basis in fact.

Any deficiency in the fertility of land to be seeded in millet may be supplied with stable manure or soluble commercial fertilizers.

Seeding: Millet calls for an especially well prepared seed bed. It should not be seeded until the soil has thoroughly warmed up and continued warm weather is assured. It may be seeded broadcast and covered with a harrow, or drilled with an ordinary grain drill.

The latter method is usually more satisfactory, giving a more even stand and requiring somewhat less seed. When drilled solid 3 pecks per acre is none too much seed for the foxtail millets. It would be better to use more rather than less. Thin seeding gives coarse plants which are especially undesirable in hay.

When millet is grown for seed or for silage it is frequently drilled in rows far enough apart to permit inter-tillage.

Barnyard millet is seeded at a lower rate than above mentioned, usually about two pecks per acre when drilled solid.

Harvesting: When wanted for hay, millet may be cut when the heads begin to appear, and on until it is in bloom. The quality of the hay deteriorates rapidly as the seed develops. Cutting should never be delayed until the seed begins to ripen. Ripe millet hay is not only much less palatable and less digestible, but the stiff hairs or beards are a source of annoyance and even danger to the stock.

Millet hay is made very much as timothy. As it is usually of ranker growth it takes somewhat longer to cure it. It is well to cure it in part in the swath and, later, leave it in the cock for a few days.

When wanted for seed it should be cut with the ordinary grain binder and handled as any cereal. It may be threshed with a grain separator, using finer riddles and light draft.

Digestible nutrients in 100 pounds of—

NAME OF FEED	Protein	Carbohydrates	Ether extract
GREEN FORAGE			
Corn fodder	1.0	11.6	0.4
Hungarian millet	2.0	16.0	0 4
Barnyard millet	1.16	13.59	0.38
DRY FORAGE			
Corn fodder	2.5	34.6	1.2
Corn stover	1.7	32 4	0 7
Timothy hay	2 8	43.4	1.4
Hungarian millet	4.5	51 7	1.3
Clover hay	6.8	35.8	1.7
GRAIN			
Corn	7.8	66.7	4 ?
Millet	8 9	45.0	3.21

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